Case Report

A rare cause of misdiagnosis in chest X-ray

Carlos Manuel Ortiz-Mendoza[1]

[1]*Department of Surgery, Faculty of Medicine, Hospital General Tacuba, ISSSTE, National Autonomous University of Mexico, Mexico City, Mexico*

Abstract

Chest X-ray is a usual tool for family physicians; however, unexpected findings in chest X-ray are a frequent challenge. We present a rare case of pulmonary hilar nodule misdiagnosis in a chest X-ray. An 84-year-old woman was sent with a diagnosis of a right pulmonary hilum nodule. She had a history of chronic obstructive pulmonary disease; so in a chest X-ray, her family physician discovered a "nodule" in her right lung hilum. Her physical exam was not relevant. In our hospital, a thoracic computed tomography (CT) scan verified the mass in the right pulmonary hilum; nevertheless, in a coronal CT scan, the "hilum lump" was the tortuous descending aorta that created an angle. This case illustrates how anatomical changes associated with vascular aging may cause this exceptional pitfall in chest X-ray.

Keywords: Aging, aorta, chest X-ray, computed tomography scan, female, hilum, imaging, lung, woman

Introduction

In family medicine, the chest X-ray is a common tool in several diseases,[1-4] and unexpected findings discovered in this modality are a frequent challenge.[2] The unexpected findings in a chest X-ray need more complex methods of evaluation and reference to other medical specialties.[2]

In pulmonology and thoracic surgery, the pulmonary solitary nodule and hilum nodules are a frequent entity to evaluate.[5] Nevertheless, a pulmonary hilum nodule may be a granuloma, primary malignant lymph node neoplasms, bronchus tumors, or metastatic tumors to lymph nodes.[5,6] However, to our best knowledge, there are not previous pictorial essays regarding anatomical changes of descending aorta associated with aging that caused misdiagnosis of pulmonary hilum nodules in chest X-ray.

Address for correspondence: Dr. Carlos Manuel Ortiz-Mendoza, Department of Surgical Oncology, Hospital General Tacuba, ISSSTE, Lago Ontario, No. 119, Colonia Tacuba, CP 11410, Deleg. Miguel Hidalgo, Mexico City, Mexico.
E-mail: cortizmendoza@yahoo.com.mx

Access this article online

Quick Response Code:

Website: www.jfmpc.com

DOI: 10.4103/2249-4863.197307

Case Report

An 84-year-old woman came with the diagnosis of a right pulmonary hilum nodule. She had a long-lasting history of obesity (body mass index of 30.3 kg/m^2) and chronic obstructive pulmonary disease treated with oxygen, bronchodilators, and a beta agonist. During an evaluation, in a chest X-ray, her family physician discovered a "nodule" in her right pulmonary hilum [Figure 1, Panel "A"]. Her physical exam was not relevant for signs of malignancy, and the chest X-ray was not conclusive. She was sent to our hospital, where a noncontrast thoracic computed tomography (CT) scan documented the right pulmonary hilar mass [Figure 1, topogram, Panel "B"]; however, in a coronal scan, the "nodule" was the tortuous descending aorta that made an angle [Figure 1, Panel "C"]. With this finding, the patient was returned to her family physician.

Discussion

This case illustrates how aortic changes associated with vascular aging may cause this exceptional misdiagnosis in chest

How to cite this article: Ortiz-Mendoza CM. A rare cause of misdiagnosis in chest X-ray. J Family Med Prim Care 2016;5:680-1.

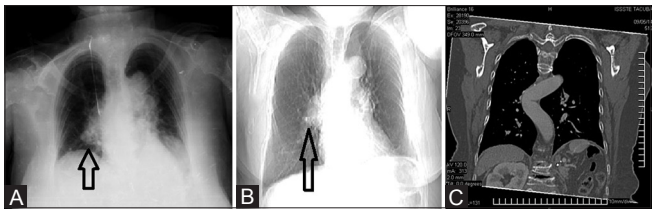

Figure 1: Panel "A," chest radiograph, showing a right hilum nodule. Panel "B," computed tomography scan topogram, corroborating the hilum nodule. Panel "C," coronal reconstruction of computed tomography scan, showing an edge formed by descending thoracic aorta that created the false impression of a hilar lump

X-ray. It is important to remember, that even with modern technological devices diagnostic pitfalls may occur; for instance, with transesophageal echocardiography or positron emission tomography.[5,7]

It is well -known; the descending thoracic aorta could suffer an expanding and unfolding process with aging.[8,9] In addition, aortic tortuosity may occur with obesity, atherosclerotic disease, and hypertension.[10] In our case, at least two of these well-recognized entities occurred.

A careful history and a diligent physical examination are the first step in identifying the underlying etiology of any symptom. Because symptoms may be a presenting complaint for diverse entities, all patients should have other diagnostic tests to confirm our impression. In our case, a chest radiograph was not useful, and a coronal CT identified the underlying problem: The tortuous descending aorta. It is documented that CT scan is a suitable instrument in thoracic diseases' evaluation, with its own limitations as all diagnostic procedures.[5,6,11]

This case is significant; there are not previous pictorial assays that reported about tortuosity of descending thoracic aorta may cause a misdiagnosis in chest X-ray.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Lam S, Lam B, Petty TL. Early detection for lung cancer. New tools for casefinding. Can Fam Physician 2001;47:537-44.
2. Holmes RL, Fadden CT. Evaluation of the patient with chronic cough. Am Fam Physician 2004;69:2159-66.
3. Kass SM, Williams PM, Reamy BV. Pleurisy. Am Fam Physician 2007;75:1357-64.
4. Washko GR. Diagnostic imaging in COPD. Semin Respir Crit Care Med 2010;31:276-85.
5. Coleman RE. PET in lung cancer. J Nucl Med 1999;40:814-20.
6. Sarkar S, Jash D, Maji A, Patra A. Approach to unequal hilum on chest X-ray. J Assoc Chest Physicians 2013;1:32-7.
7. Katz ES, Applebaum RM, Earls JP, Krinsky G, Weinreb J, Kronzon I. Tortuosity of the descending thoracic aorta simulating dissection on transesophageal echocardiography. J Am Soc Echocardiogr 1997;10:83-7.
8. Craiem D, Casciaro ME, Graf S, Chironi G, Simon A, Armentano RL. Effects of aging on thoracic aorta size and shape: A non-contrast CT study. Conf Proc IEEE Eng Med Biol Soc 2012;2012:4986-9.
9. Rylski B, Desjardins B, Moser W, Bavaria JE, Milewski RK. Gender-related changes in aortic geometry throughout life. Eur J Cardiothorac Surg 2014;45:805-11.
10. Mochida M, Sakamoto H, Sawada Y, Yokoyama H, Sato M, Sato H, *et al.* Visceral fat obesity contributes to the tortuosity of the thoracic aorta on chest radiograph in poststroke Japanese patients. Angiology 2006;57:85-91.
11. Nishino M, Kubo T, Kataoka ML, Gautam S, Raptopoulos V, Hatabu H. Evaluation of thoracic abnormalities on 64-row multi-detector row CT: Comparison between axial images versus coronal reformations. Eur J Radiol 2006;59:33-41.